

### Subpart 34.10—Fire Main System, Details

#### § 34.10-1 Application—TB/ALL.

(a) On all tankships the provisions of this subpart, with the exception of § 34.10-90, shall apply to all fire main installations contracted for on or after May 26, 1965. Installations contracted for prior to May 26, 1965, shall meet the requirements of § 34.10-90.

(b) If a fire main system is installed on a tank barge, the system shall meet the intent of this subpart insofar as reasonable and practicable.

#### § 34.10-5 Fire pumps—T/ALL.

(a) Tankships shall be equipped with independently driven fire pumps in accordance with table 34.10-5(a).

TABLE 34.10-5(a)—FIRE PUMPS

| Size vessel, L.O.A. (feet) |           | Minimum number of pumps | Powerful streams of water per pump | Minimum hydrant and hose size (inches) |                   |
|----------------------------|-----------|-------------------------|------------------------------------|--|-------------------|
| Over—                      | Not over— |                         |                                    | Exterior stations                      | Interior stations |
|                            | 100       | ( <sup>1</sup> )        | .....                              | .....                                  | .....             |
| 100                        | 250       | 2 1                     | 3 2                                | 1 1/2                                  | 1 1/2             |
| 250                        | 400       | 2                       | 3 2                                | 1 1/2                                  | 1 1/2             |
| 400                        | 650       | 2                       | 3 2                                | 4 2 1/2                                | 1 1/2             |
| 650                        | .....     | 2                       | 3 3                                | 4 2 1/2                                | 1 1/2             |

<sup>1</sup> Vessels of 65 feet and not over 100 feet shall be equipped with 2 B-V extinguishers. (Refer to Table 34.50-5(c).) Vessels under 65 feet shall be equipped with 1 B-V extinguisher. (Refer to Table 34.50-5(c).)

<sup>2</sup> Vessels of 1,000 gross tons and over on an international voyage shall have at least 2 fire pumps.

<sup>3</sup> From hydrants having greatest pressure drop between fire pump(s) and nozzles.

<sup>4</sup> Where 2 1/2-inch hydrant size is required, two 1 1/2-inch outlets may be substituted therefor with two 1 1/2-inch hoses.

(b) Each pump shall be capable of delivering simultaneously the number of streams of water required by table 34.10-5(a) from the outlets having the greatest pressure drop between fire pump(s) and nozzles at a Pitot tube pressure of approximately 75 p.s.i. Where 1 1/2-inch hose is permitted in lieu of 2 1/2-inch hose by footnote 3 of Table 34.10-5(a), the pump capacity shall be determined on the basis that both hoses are used.

(c) On tankships of 1,000 gross tons and over on an international voyage, each required fire pump, while delivering water through the fire main system at a pressure corresponding to that required by § 34.10-15(e), shall have a minimum capacity of at least two-thirds of that required for an inde-

pendent bilge pump if no length correction is taken for the cargo tank space. However, in no case shall the capacity of each fire pump be less than that otherwise required by this section.

(d) Fire pumps shall be fitted on the discharge side with relief valves set to relieve at 25 p.s.i. in excess of the pressure necessary to maintain the requirements of paragraph (b) of this section.

(e) Fire pumps shall be fitted with a pressure gage on the discharge side of the pumps.

(f) Fire pumps may be used for other purposes provided at least one of the required pumps is kept available for use on the fire system at all times. In no case shall a pump having connection to an oil line be used as a fire pump. Branch lines connected to the fire main for purposes other than fire and deck wash shall be arranged so that the requirements of paragraph (b) of this section and any other services installed on the fire main can be met simultaneously.

(g) On all vessels where two fire pumps are required, they shall be located in separate spaces, and the arrangement of pumps, sea connections, and sources of power shall be such as to insure that a fire in any one space will not put all of the fire pumps out of operation. However, where it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size, or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide system may be accepted as an alternate method of extinguishing any fire which would affect the powering and operation of at least one of the required fire pumps.

[CGFR 65-50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 95-028, 62 FR 51199, Sept. 30, 1997]

#### § 34.10-10 Fire station hydrants, hose and nozzles—T/ALL.

(a) The size of fire station hydrants and hose required shall be as noted in Table 34.10-5(a).

(b) Fire hydrants shall be of sufficient number and so located that any part of living quarters, storerooms, working spaces and weather decks accessible to crew while at sea may be

§ 34.10-10

46 CFR Ch. I (10-1-12 Edition)

reached with two effective spray patterns of water, one of which shall be from a single 50-foot length of hose. In main machinery spaces all portions of such spaces shall be capable of being reached by at least 2 effective spray patterns of water, each of which shall be from a single 50-foot length of hose from separate outlets.

(c) The outlets at the fire station hydrant shall be limited to any position from the horizontal to the vertical pointing downward so that hose will lead horizontally or downward to minimize possibility of kinking.

(d) All fire station hydrants shall be equipped with spanners suitable for use on the hose at that station.

(e) Each fire station hydrant must have at least 1 length of firehose. Each firehose on the hydrant must have a combination solid stream and water spray firehose nozzle that meets the requirements in subpart 162.027 of this chapter. Firehose nozzles previously approved under subpart 162.027 of this chapter may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. A suitable hose rack or other device must be provided. Hose racks on weather decks must be located to afford protection from heavy seas. The hose must be stored in a location that is readily visible.

TABLE 34.10-10(e) HYDRANTS WITH COAST GUARD APPROVED LOW-VELOCITY WATER SPRAY APPLICATORS

| Location              | Number of hydrants with approved applicators | Approved applicator length (feet) |
|-----------------------|--|-----------------------------------|
| Living space .....    | 1  | 4                                 |
| Weather deck .....    | 4  | 10 or 12                          |
| Machinery space ..... | 2  | 4                                 |

(f) Each combination firehose nozzle previously approved under subpart 162.027 of this chapter in the locations listed in table 34.10-10(E) must have a low-velocity water spray applicator also previously approved under subpart 162.027 of this chapter that is of the length listed in that table.

(g) The pipes and fire station hydrants shall be so placed that the fire hose may be easily coupled to them.

All hydrants shall be so located as to be readily accessible. If deck cargo is carried, it shall not interfere with access to the fire station hydrants, and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.

(h) Each fire station hydrant or “y” branch shall be equipped with a valve so that the hose may be removed while there is pressure on the fire main.

(i) Fire station hydrant connections shall be brass, bronze, or other equivalent metal. Couplings shall either:

(1) Use National Standard fire hose coupling threads for the 1½ inch (38 millimeter) and 2½ inch (64 millimeter) hose sizes, i.e. 9 threads per inch for 1½ inch hose, and 7½ threads per inch for 2½ inch hose; or

(2) Be a uniform design for each hose diameter throughout the vessel.

(j) Fire hose shall be 50 feet in length except on weather decks the hose shall be increased in length if necessary to enable a single length to be goosenecked over each side of the vessel. If two fire mains are installed on the weather decks, the length of hose shall be such that it may be goosenecked over the side from the nearest fire main.

(k) Fire hose when part of the fire equipment shall not be used for any other purpose than fire extinguishing, fire drills, and testing.

(l) Fire hose shall be connected to outlets at all times. However, in heavy weather on open decks where no protection is afforded the hose may be removed temporarily from the hydrant and stowed in an accessible location nearby. While in port, fire hose in way of cargo area shall be kept ready for immediate use. The fire hose may be temporarily removed when it will interfere with the handling of cargo.

(m) Each section of fire hose used after January 1, 1980 must be lined commercial fire hose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ-H-451E. Hose that bears the label of Underwriters' Laboratories, Inc. as lined fire hose is accepted as conforming to this requirement. Each section of replacement fire hose or any section of new fire hose placed aboard a vessel after January 1, 1977 must also conform

## Coast Guard, DHS

## § 34.10-90

to the specification required by this paragraph.

(n) Coupling shall conform to the requirements of paragraph (h) of this section.

(o) Each low-velocity water spray applicator under paragraph (f) of this section must have fixed brackets, hooks, or other means for stowing next to the hydrant.

[CGFR 65-50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 74-60, 41 FR 43151, Sept. 30, 1976; CGD 76-086, 44 FR 2391, Jan. 11, 1979; CGD 95-027, 61 FR 25999, May 23, 1996; CGD 95-028, 62 FR 51199, Sept. 30, 1997]

### § 34.10-15 Piping—T/ALL.

(a) All piping, valves and fittings shall meet the applicable requirements of subchapter F (Marine Engineering) of this chapter.

(b) An adequate number of valves shall be installed to isolate damaged sections of piping except on self-propelled vessels carrying bulk liquefied gases that must have stop valves:

(1) At cross connections;

(2) At the front of the after deck house; and

(3) In the cargo area spaced 40 m (131 ft.) or less between hydrants.

(c) All distribution valves shall be marked as required by § 35.40-10 of this subchapter.

(d) Tankships of 500 gross tons and over on an international voyage must be provided with at least one international shore connection which meets ASTM F 1121 (incorporated by reference, see § 34.01-15). Facilities must be available enabling such a connection to be used on either side of the vessel.

(e) For tankships on an international voyage, the diameter of the fire main shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously. This requirement is in addition to § 34.10-5(b). The discharge of this quantity of water through hoses and nozzles at a sufficient number of adjacent hydrants shall be at a minimum Pitot tube pressure of approximately 71 pounds per square inch on self-propelled vessels that carry bulk liquefied gases and approximately 50

pounds per square inch on other tankships.

[CGFR 65-50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 74-289, 44 FR 26006, May 3, 1979, CGD 88-032, 56 FR 35821, July 29, 1991; USCG-2000-7790, 65 FR 58459, Sept. 29, 2000]

### § 34.10-90 Installations contracted for prior to May 26, 1965—T/ALL.

(a) Installations contracted for prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) Except as further modified by this paragraph, the details of the systems shall be in general agreement with §§ 34.10-5 through 34.10-15 insofar as is reasonable and practicable.

(3) Tankships of less than 500 gross tons shall be equipped with an efficient hand pump capable of delivering 50 gallons per minute or a power-driven pump of equivalent capacity. However, on tankships of 20 gross tons or under where it is impracticable to install a hand or power-operated fire pump, or on tankships with only one man in the crew, at least one additional B-II fire extinguisher may be accepted in lieu of a fire pump.

(4) Tankships of 500 gross tons and over but not over 1,000 gross tons shall be provided with one independently power-driven pump.

(5) Tankships of over 1,000 gross tons shall be provided with two independently power-driven pumps.

(6) On tankships of 500 gross tons and over, the capacity of the combined fire pump installation shall be one-fifth gallon per minute per gross ton of the ship. The maximum total fire pump capacity required for any tankship shall be 800 gallons per minute.

(7) Each fire pump on a tankship of 500 gross tons or more must deliver enough water to the fire main so that the topmost outlet on the fire main emits two jets of water at a Pitot tube pressure of 50 pounds per square inch